AMENDMENTS TO THE CLAIMS

Please cancel claims 1 and 2 without prejudice or disclaimer, add claim 20, and amend claims 3-9 and 11-19 as follows:

1. – 2. (Canceled).

3. (Currently Amended) An air compressor, comprising:

a tank portion for reserving compressed air used in a pneumatic tool;

a compressed air generation portion for generating compressed air and supplying said compressed air to said tank portion;

a drive portion ~~including~~ comprising a motor for driving said compressed air generation portion; and

a control circuit portion for controlling said drive portion~~,~~;

wherein the control circuit portion ~~includes~~ comprises a unit for calculating internal pressure P of said tank portion ~~on the basis of~~ based on a detection signal output from a pressure sensor, calculating ~~the~~ a rate $\Delta P/\Delta T$ of pressure change ΔP to ~~predetermined~~ time ΔT, and deciding ~~the~~ a rotational speed of said motor ~~on the basis of~~ based on ~~at least one of~~ the pressure P and the rate $\Delta P/\Delta T$ of pressure change ΔP.

4. (Currently Amended) ~~An~~ The air compressor according to claim 3, wherein said control circuit portion further ~~includes~~ comprises a memory for storing information indicating relations among the pressure P of said tank portion, the rate $\Delta P/\Delta T$ of pressure change ΔP, and the rotational speed N of said motor~~,~~; and

wherein the rotational speed of said motor N is decided by means of searching said memory.

5. (Currently Amended) A method of controlling an air compressor, said air compressor including a tank portion for reserving compressed air used in a pneumatic tool, a compressed air generation portion for generating compressed air and supplying said compressed air to said tank portion, a drive portion ~~having~~ including a motor for driving said compressed air generation portion, and a control circuit portion for controlling said drive portion,; the method comprising:

detecting pressure P of said compressed air reserved in said tank portion;

calculating the rate $\Delta P/\Delta T$ of change ΔP in pressure P to ~~predetermined~~ time ΔT; and

deciding ~~the~~ a rotational speed of said motor of said drive portion ~~on the basis of~~ based on ~~at least one of~~ the pressure P of said tank portion and the rate $\Delta P/\Delta T$ of pressure change.

6. (Currently Amended) The method of controlling ~~an~~ the air compressor according to claim 5, further comprising:

searching for the rotational speed of said motor by referring to a table stored in a memory of said control circuit portion ~~on the basis of~~ based on the pressure P of said tank portion and the rate $\Delta P/\Delta T$ of pressure change.

7. (Withdrawn – Currently Amended) An air compressor, comprising:

a tank portion for reserving compressed air used in a pneumatic tool;

a compressed air generation portion for generating compressed air and supplying said compressed air to said tank portion;

a drive portion ~~including~~ comprising a motor for driving said compressed air generation portion;

a control circuit portion for controlling said drive portion; and

a temperature sensor for detecting the temperature of said motor of said drive portion,;

wherein said control circuit portion controls ~~the~~ a rotational speed of said motor multistageously based on ~~on the basis of~~ a detection signal output from said temperature sensor.

8. (Withdrawn – Currently Amended) The air compressor according to claim 7, further comprising:

a pressure sensor for detecting pressure of compressed air in said tank portion~~,~~;

wherein said control circuit portion controls the rotational speed of said motor multistageously based on ~~on the basis of~~ said detection ~~signals~~ signal output from said temperature sensor and a detection signal output from said pressure sensor.

9. (Withdrawn – Currently Amended) The air compressor according to claim 7, further comprising:

a voltage detection circuit for detecting a power-supply voltage of said drive portion; and

a current detection circuit for detecting a load current of said drive portion~~,~~;

wherein said control circuit portion controls the rotational speed of said motor multistageously ~~on the basis of~~ based on the detection signal output from said temperature sensor and a detection signal output from at least one of said voltage detection circuit and said current detection circuit.

10. (Withdrawn) The air compressor according to claim 7, wherein said control circuit portion controls the rotational speed of said motor in at least three stages of high speed, middle speed and low speed.

11. (Withdrawn – Currently Amended) A method of controlling an air compressor, said air compressor including a tank portion for reserving compressed air used in a pneumatic tool, a

compressed air generation portion for generating compressed air and supplying said compressed air to said tank portion, a drive portion ~~having~~ including a motor for driving said compressed air generation portion, and a control circuit portion for controlling said drive portion, said method comprising:

detecting ~~the~~ a temperature of said motor of said drive portion by a temperature sensor; and

controlling ~~the~~ a rotational speed of said motor multistageously in at least three stages of high speed, middle speed and low speed on ~~the~~ a basis of a detection signal output from said temperature sensor.

12. (Withdrawn – Currently Amended) ~~A~~ The method of controlling an air compressor according to claim 11, further comprising:

detecting ~~the~~ a pressure of compressed air in said tank portion by a pressure sensor; and

controlling the rotational speed of said motor in at least three stages of high speed, middle speed and low speed on the basis of detection signals output from said temperature sensor and said pressure sensor.

13. (Withdrawn – Currently Amended) The method of controlling an air compressor according to claim 11, further comprising:

detecting a power-supply voltage of said drive portion and a load current of said drive portion; and

controlling the rotational speed of said motor in at least three stages of high speed, middle speed and low speed on the basis of ~~the~~ a detected voltage and current and ~~a~~ said detection signal output from said temperature sensor.

14. (Withdrawn – Currently Amended) An air compressor, comprising:

a tank portion for reserving compressed air used in a pneumatic tool;

a compressed air generation portion for generating compressed air and supplying said compressed air to said tank portion;

a drive portion ~~including~~ comprising a motor for driving said compressed air generation portion;

a control circuit portion for controlling said drive portion; and

a pressure sensor for detecting a pressure of said compressed air reserved in said tank portion~~,~~;

wherein said control circuit portion calculates ~~the~~ a rate $\Delta P1/\Delta T1$ of change $\Delta P1$ in an internal pressure of said tank portion to a relatively short time $\Delta T1$ and the rate $\Delta P2/\Delta T2$ of change $\Delta P2$ in internal pressure of said tank portion to a time $\Delta T2$ longer than the time $\Delta T1$ ~~on the basis of~~ based on detection signals output from said pressure sensor and controls ~~the~~ a rotational speed of said motor multistageously ~~on the basis of~~ based on at least one of the two pressure change rates.

15. (Withdrawn – Currently Amended) The air compressor according to claim 14, further comprising:

a temperature sensor for detecting ~~the~~ a temperature of said motor~~,~~;

wherein said control circuit portion controls ~~the~~ a rotational speed of said motor multistageously ~~on the basis of~~ based on the rate $\Delta P1/\Delta T1$ of change $\Delta P1$ and the rate $\Delta P2/\Delta T2$ of change $\Delta P2$ ~~the two pressure change rates~~ and a detection signal output from said temperature sensor.

16. (Withdrawn – Currently Amended) The air compressor according to claim 15, further comprising:

a voltage sensor for detecting a power-supply voltage of said drive portion; and

a current sensor for detecting a load current of said drive portion~~,~~;

wherein said control circuit portion controls the rotational speed of said motor multistageously ~~on the basis of the two pressure change rates~~ based on the rate $\Delta P1/\Delta T1$ of change $\Delta P1$ and the rate $\Delta P2/\Delta T2$ of change $\Delta P2$ and at least one of detection signals output from said voltage sensor and said current sensor.

17. (Withdrawn – Currently Amended) A method of controlling an air compressor, said air compressor including a tank portion for reserving compressed air used in a pneumatic tool, a compressed air generation portion for generating compressed air and supplying said compressed air to said tank portion, a drive portion ~~having~~ including a motor for driving said compressed air generation portion, and a control circuit portion for controlling said drive portion~~,~~; said method comprising:

detecting a pressure P of said compressed air reserved in said tank portion;

calculating ~~the~~ a rate $\Delta P1/\Delta T1$ of pressure change $\Delta P1$ to a relatively short time $\Delta T1$ ~~on the basis of~~ based on the detected pressure P;

calculating ~~the~~ a rate $\Delta P2/\Delta T2$ of pressure change $\Delta P2$ to a time $\Delta T2$ longer than the time $\Delta T1$ ~~on the basis of~~ based on the detected pressure P; and

controlling ~~the~~ a rotational speed of said motor multistageously ~~on the basis of~~ based on the rate $\Delta P1/\Delta T1$ of change $\Delta P1$ and the rate $\Delta P2/\Delta T2$ of change $\Delta P2$ ~~the two pressure change rates~~.

18. (Withdrawn – Currently Amended) The method of controlling an air compressor according to claim 17, further comprising:

detecting ~~the~~ a temperature T of said motor; and

controlling the rotational speed of said motor multistageously ~~on the basis of the two pressure change rates~~ based on the rate ΔP1/ΔT1 of change ΔP1 and the rate ΔP2/ΔT2 of change ΔP2 and a detection of said temperature.

19. (Withdrawn – Currently Amended) The method of controlling an air compressor according to claim 17, further comprising:

detecting a power-supply voltage E of said drive portion and a load current I of said drive portion; and

controlling the rotational speed of said motor multistageously ~~on the basis of the two pressure change rates~~ based on the rate ΔP1/ΔT1 of change ΔP1 and the rate ΔP2/ΔT2 of change ΔP2 and at least one of the detected power-supply voltage E and the detected load current I.

20. (New) An air compressor, comprising:

a tank portion for reserving compressed air used in a pneumatic tool;

a compressed air generation portion for generating compressed air and supplying said compressed air to said tank portion;

a drive portion comprising a motor for driving said compressed air generation portion;

a pressure sensor for detecting pressure of said compressed air reserved in said tank portion; and

a control circuit portion for controlling said drive portion, said control circuit portion comprising:

a unit for controlling a rotational speed of said motor multistageously based on a detection signal output from said pressure sensor; and

a plurality of data tables, said control circuit portion referring to said data tables to determine said rotational speed of said motor so as to be optimum for keeping said detection signal output from said pressure sensor within a predetermined range.